

WHAT IS CLAIMED IS:

- 1 1. A matrix graft consisting essentially of collagen and elastin.
- 1 2. A matrix graft in accordance with claim 1, said matrix graft being an  
2 acellular matrix graft isolated from muscle tissue selected from the group consisting of  
3 bladder tissue, heart tissue, intestine tissue or stomach tissue.
- 1 3. A matrix graft in accordance with claim 2, said graft being isolated from  
2 bladder tissue.
- 1 4. A matrix graft in accordance with claim 3, said matrix graft being  
2 prepared from tissue isolated from an animal selected from the group consisting of rat,  
3 rabbit, hamster, dog, pig and human.
- 1 5. A matrix graft in accordance with claim 3, said matrix graft being  
2 prepared from tissue isolated from an animal selected from the group consisting of rat,  
3 rabbit, hamster, dog, pig and human, and indicating essentially no cell nuclei when  
4 stained with a dye selected from the group consisting of trichrome, H&E,  $\alpha$ -actin and  
5 PGP.
- 1 6. A matrix graft in accordance with claim 3, said matrix graft being  
2 isolated from human bladder tissue and having an elastic modulus of about 0.40 to about  
3 0.80 MPa.
- 1 7. A matrix graft in accordance with claim 3, said matrix graft being  
2 isolated from rat bladder tissue and having an elastic modulus of about 0.80 to about  
3 2.10 MPa.
- 1 8. A matrix graft in accordance with claim 3, said matrix graft being  
2 isolated from pig bladder tissue and having an elastic modulus of about 0.25 to about  
3 0.60 MPa.

1 9. A method for the preparation of a bladder acellular matrix graft,  
2 comprising:  
3 (a) removing mucosa from an excised bladder cap to provide a bladder wall;  
4 (b) treating the bladder wall with chemical and enzyme agents to release  
5 intracellular components from said bladder wall to provide an intermediate matrix; and  
6 (c) solubilizing and removing cell membranes and intracellular lipids from  
7 said intermediate matrix to provide a bladder acellular matrix graft.

1 10. A method in accordance with claim 9, wherein said removal of said  
2 mucosa is carried out mechanically.

1 11. A method in accordance with claim 9, wherein said enzyme agent is  
2 DNase.

1 12. A method in accordance with claim 9, wherein said chemical agent is  
2 sodium azide.

1 13. A method in accordance with claim 9, wherein said mucosa is removed  
2 by scraping, said chemical agent is  $\text{NaN}_3$  and said enzyme agent is DNase.

1 14. A method of restoring bladder function in an animal having a partially  
2 damaged bladder, said method comprising:  
3 (a) removing the portion of the bladder which is damaged; and  
4 (b) replacing said portion with a bladder acellular matrix graft to promote  
5 regeneration of bladder tissue and restore said bladder function.

1 15. A method in accordance with claim 14, wherein said animal is selected  
2 from the group consisting of rat, pig, dog and human.

1 16. A method in accordance with claim 14, wherein said bladder acellular  
2 matrix graft is prepared according to claim 9 and is derived from xenographic tissue.

1 17. A method in accordance with claim 14, wherein said bladder acellular  
2 matrix graft is prepared according to claim 9 and is derived from allographic tissue.

1 18. A method for promoting regrowth and healing of damaged or diseased  
2 muscle tissues, said method comprising replacing said damaged or diseased muscle tissue  
3 with an acellular matrix graft prepared from muscle tissue and consisting essentially of  
4 acellular collagen and elastin.

1 19. A method in accordance with claim 18, wherein said muscle tissue is  
2 selected from the group consisting of bladder, heart, intestine and stomach.

1 20. A method in accordance with claim 18, wherein said acellular matrix  
2 graft is organ-specific for said damaged or diseased muscle tissue.

1 21. A method in accordance with claim 18, wherein said acellular matrix  
2 graft is from autographic tissue.

1 22. A method in accordance with claim 18, wherein said acellular matrix  
2 graft is from allographic tissue.

1 23. A method in accordance with claim 18, wherein said acellular matrix  
2 graft is from xenographic tissue.

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